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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,303	10/14/2003	Eko N. Onggosanusi	TI-35477	7910
23494 7590 11/27/2007 TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			EXAMINER PUENTE, EVA YI ZHENG	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 11/27/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/687,303	Applicant(s) ONGGOSANUSI ET AL.	
	Examiner Eva Y. Puente	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,9-12,14-16,19-26,28-30 and 33-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,9-12,14-16,19-26,28,29,39-46 is/are rejected.
- 7) ☒ Claim(s) 30 and 33-38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3, 6, 9-12, 14-16, 19-26, 28-30, 33-46 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 1 is objected to because of the following informalities: on line 7, please add -- and -- after "interference"; on line 8, "may be" should be changed to -- is -- or -- are --.

3. Claim 6 is objected to because of the following informalities: on line 2, "can be" should be changed to -- is -- or -- are --.

4. Claim 12 is objected to because of the following informalities: on line 2, "may be" should be changed to -- is -- or -- are --.

5. Claim 14 is objected to because of the following informalities: on line 1-2, "can be" should be changed to -- is -- or -- are --.

6. Claim 23 is objected to because of the following informalities: on line 1-2, "can be" should be changed to -- is -- or -- are --.

7. Claim 24 is objected to because of the following informalities: on line 13, "may be" should be changed to -- is -- or -- are --.

8. Claim 30 is objected to because of the following informalities: on line 4, "may be" should be changed to -- is -- or -- are --.

9. Claim 35 is objected to because of the following informalities: on line 10, "may be" should be changed to -- is -- or -- are --.
10. Claim 39 is objected to because of the following informalities: on line 8, "may be" should be changed to -- is -- or -- are --.
11. Claim 40 is objected to because of the following informalities: on line 2, "can be" should be changed to -- is -- or -- are --.
12. Claim 42 is objected to because of the following informalities: on line 1, "may be" should be changed to -- is -- or -- are --.
13. Claim 45 is objected to because of the following informalities: on line 1, "may be" should be changed to -- is -- or -- are --.
14. Claim 46 is objected to because of the following informalities: on line 1, "may be" should be changed to -- is -- or -- are --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

16. Claims 1, 3, 6, 9-12, 14-16, 19-26, 28, 29, 39-46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

17. It appears that the current application has three different embodiments as depicted in Fig. 5, 6, and 7; and described in specification [0057-0073]. Claims 1, 3, 6, 9-12, 14-16, 19-26, 28, 29, 39-46 contains subject matters of different embodiments in such a way as not to enable one skilled in the art to which it pertains. Examiner suggests the following:

- a) Claim 9 should be canceled because independent claim 1 corresponds to Fig. 1 and 5 (embodiment 1), while dependent claim 9 corresponds to Fig. 6 (embodiment 2).
- b) Claim 10 should be amended to dependent upon claim 12.
- c) Claim 11 should be amended to dependent upon claim 12.
- d) Claim 12 should be amended as independent claim, and combine with subject matters of claims 1 and 9. Since claim 12 corresponds to Fig. 7 (embodiment 3).
- e) Claim 14 should be amended to dependent upon claim 12.
- f) Claim 15 should be canceled.
- g) Claim 16 should be canceled.
- h) Claims 19 and 21 should be amended to dependent upon claim 46. Since claim 46 corresponds to Fig. 7 (embodiment 3).
- i) Claim 28 should be canceled since it corresponds to Fig. 6 (embodiment 2), while the independent claim 24 corresponds to Fig. 5 (embodiment 1).

- j) Claim 29 should be canceled since it corresponds to Fig. 7 (embodiment 3), while the independent claim 24 corresponds to Fig. 5 (embodiment 1).
- k) Claim 41 should be canceled for the same reason as explained above.
- l) Claim 42 should be amended as independent claim, and combine with subject matters of claims 1 and 41.
- m) Claims 43 and 44 should be canceled for the same reason as explained above.
- n) Claim 45 should be amended as independent claim, and combine with subject matters of claims 1, 43 and 44.
- o) Claim 46 should be amended as independent claim, and combine with subject matters of claims 1, 43 and 44.

Allowable Subject Matter

18. Claims 30 and 33-38 would be allowable if rewritten to overcome the objections, set forth in this Office action.

19. The following is an examiner's statement of reasons for the indication of allowance: None of the prior art teaches or suggests a receiver comprises a channel estimation unit, which containing circuitry to calculated an estimate of a communication channel using a zero forcing function; a weighting vector unit coupled to the channel estimation unit; a feedback unit coupled to the weighting vector unit, the feedback unit to provide the estimate of the communications channel back to a source of the received signal; and an interference resistant detection unit, coupled to the input signal, containing a circuitry to use for

estimation of the communication channel, spreading codes, and the weighting vector to improve interference resistance of the receiver.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Y Zheng whose telephone number is

571-272-3049. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eva Yi Puente
Examiner
Art Unit 2611

November 20, 2007


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER